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Office Memorandum • UNITED STATES GOVERNMENT

TO : The Files

DATE: 28 October 1958

FROM :

SUBJECT: Hand-Crank Generator, HG-3 - Trip Report

FOR 9	REV DATE 12/4/80	BY 37169
ORIG COMP 33	OPT 56	TYPE 2
ORIG CLASS 5	PAGES 2	REV CLASS C
JUST 22	NEXT REV 2010	AUTHI HH TU

1. On 23 October 1958 a visit was made to the [redacted] to monitor progress on Contract RD-138, Task Order 4, development of the HG-3. Persons present at the discussions were:

[redacted]
OC-E/R&D-EP

2. The design of a suitable regulator for the HG-3 has been completed by the contractor. The constant current output from this regulator is approximately 1.05 amperes and the peak current to average current ratio is about 1.3 to 1. The specifications called for currents up to one ampere and a peak to average current ratio of not more than 1.5 to 1. The efficiency of the present bread-boarded regulator is about 80% with approximately 3 watts being dissipated in the regulator. This efficiency is obtainable over the cranking speed range of 60 to 100 rpm. [redacted] believes the efficiency can be increased to 85 or 87% with circuitry refinement.

3. The specifications on the development of the HG-3 called for a dual-function meter using a push button to select the desired reading. With the button depressed, the meter would read the terminal voltage of the battery. With the button released, the meter would read the magnitude of the charging current. It would seem more desirable to use a neon bulb or similar device for an indication on the HG-3 for the following reasons:

- a. This indicator could be a smaller device than the meter, thus leaving more room for the regulator.
- b. This indicator would only indicate that current is flowing, since the current from the regulator is constant at approximately one ampere.
- c. It is not necessary to be able to read the terminal voltage of the battery, because nickel-cadmium batteries maintain a nearly constant voltage throughout their state of charge.

The contractor wishes to make this change in the design of the HG-3, and since it is only necessary to know when the generator is doing work, it is recommended that this change be permitted.

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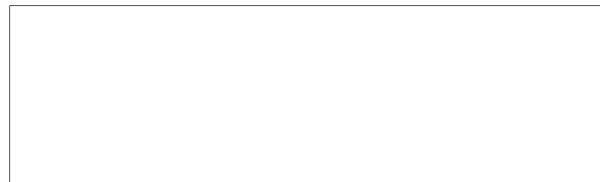
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4. Work has been delayed on the fabrication of the generator itself because the contractor has been unable to obtain the necessary magnets. [] said that he hoped to get some magnets in the near future so that scheduling of the work would not be interrupted. At the present time, work on the HG-3 is ahead of schedule and expenditures on this contract are below those proposed.

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